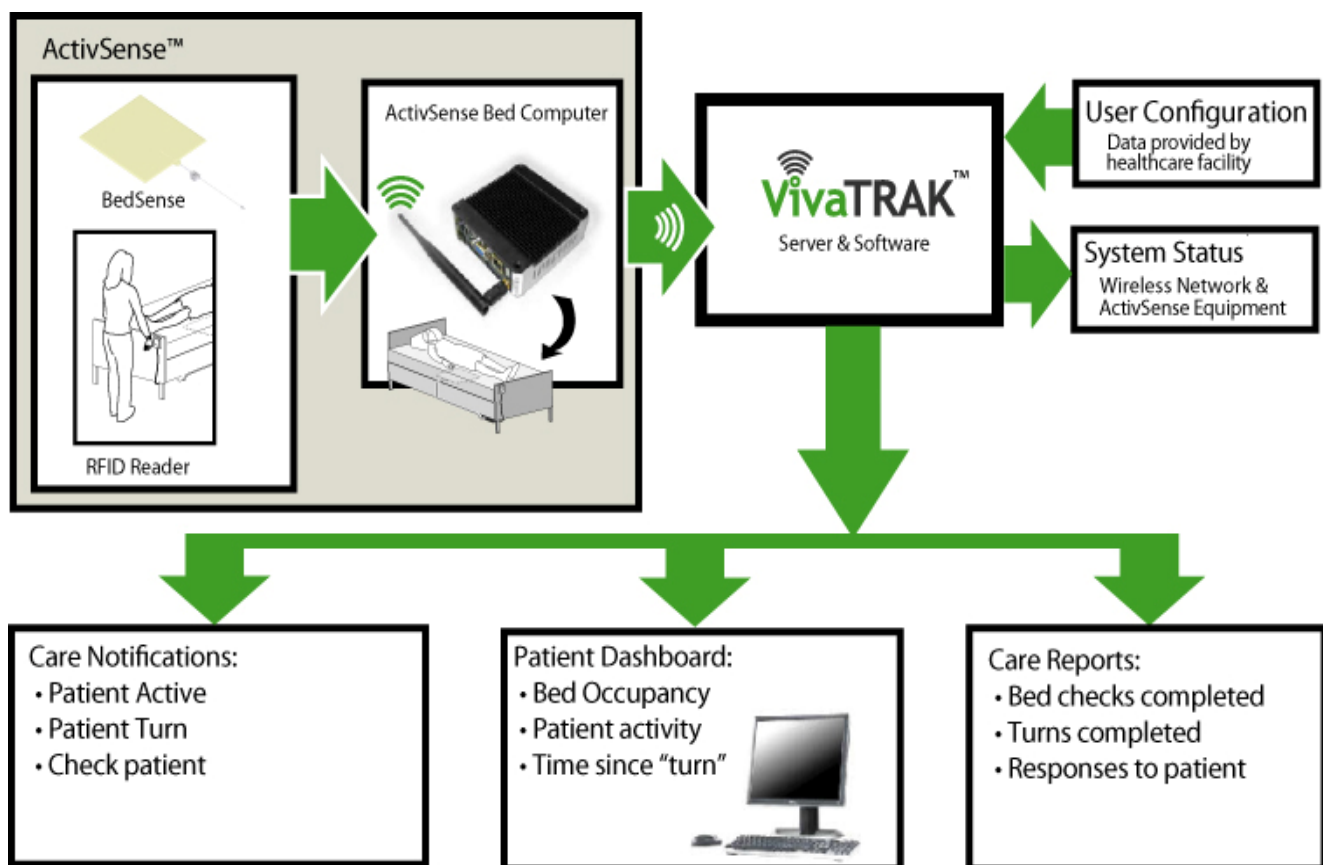


System Application

The VivaTRAK system solution from Wireless MedCARE is designed for monitoring patient activity and care delivery in long term care facilities. VivaTRAK is a patient focused sensor-assisted care system that improves patient care while increasing operational efficiency and documentation of care activities associated with preventable conditions such as pressure ulcers and falls. The system operates on the principle of monitoring a patient's activity, processing this data and providing the appropriate notifications and reports to the nursing staff, and then verifying their response, i.e. that care was actually delivered.



Condition-based notifications provided by VivaTRAK include:

- If a resident is in bed and hasn't moved in a specified period of time, the staff will be notified that the resident is overdue for turning in compliance with the standard of care to prevent **pressure ulcers**
- If a fall-prone resident has become active after being idle for some period of time, the staff will be notified that the patient is **active** and the resident may need assistance in order to prevent a fall if he or she attempts to get out of bed.

System Benefits

The benefits of VivaTRAK to nursing home operators include:

- **Improved outcomes.** The ability to dynamically manage care tasks can positively affect patient outcomes.
- **Improvements in staff efficiency.** The ability to dynamically manage care tasks can positively affect operational efficiency. For example, some “scheduled tasks” such as checking on or turning residents at specific time intervals can be performed as a “condition or event based task” on an as needed basis. In addition, staff time converted from generating documentation to providing care results in better quality care.
- **Increased revenues.** The system documents healthcare events and completed tasks are documented by the system, which enables the facility to properly claim reimbursement for services that are commonly under reported, i.e. there is better billing of care delivered.
- **Enhanced census.** The positive impact of the VivaTRAK system on the quality of patient care should attract new customers resulting in increased patient census, revenue, and profit.
- **Better ability to defend against audits and lawsuits.** In the absence of detailed operational records that the standard of care was provided, facilities frequently settle claims of substandard care rather than defend themselves. Detailed documentation that the standard of care was provided is a defense against false claims of substandard care.

System Description

Sensing, wireless communications, and computing are integrated with application software to provide a closed loop, end-to-end system consisting of:

- ActivSenseTM - The equipment at the bed
- A wireless WiFi network using standard commercial off the shelf 802.11g equipment
- The information processing and user interface equipment
 - The VivaTRAK server and software which aggregates bed sensor data and processes that data into actionable information in the form of messages and reports that can be interfaced to software applications already in use in the facility such as electronic medical records (EMR), care planning software, billing systems, etc.
 - A user friendly GUI - The primary interface to the nursing staff is via a mobile handheld device that uses simple text messages. A kiosk terminal or mobile PC can also be used.

VivaTRAK is both a monitoring system that generates actionable information, and assigns tasks to the nursing staff as well as a system that closes the loop via feedback that the appropriate action was taken. The feedback comes from 3 sources:

- An RFID reader that records that the nurse came to the room
- An entry into the mobile handheld device that the assigned task(s) were completed
- Sensor data that provides verification.

ActivSense is designed to focus on two of the most significant care issues that Skilled Nursing Facilities face - falls and pressure ulcers. The ActivSense set of innovative equipment is installed on a patient's bed to monitor their activity while they are in bed as well as monitoring the presence of attending staff.

ActivSense consists of a low-power computer (the bed computer) that is mounted on or near the bed and monitoring devices that connect to the bed computer via USB or wireless. Software programs in the bed computer interface to the sensors and/or RFID reader then periodically sends data to the VivaTRAK Gateway. ActivSense features several differentiators that provide a significant advantage in the marketplace, including:

- **Patented sensor technology** - Wireless MedCARE holds the exclusive worldwide commercial license in the field of healthcare to patents licensed from Virginia Tech for low cost sensing with fiber optics
- **Non-intrusive** - None of the components of the VivaTRAK system come into contact with the patient's or resident's body.
- **System Solution** – The equipment at the bed monitors the patient and then via an RFID reader, the responsiveness of the staff to reported status of that patient's activity.

The **Bed computer** is a highly integrated unit:

- Small: 4.5" x 4.5" x 1.5"
- Energy efficient
- Supports interfaces to WiFi 802.11g and USB
- Powered from a medical grade power supply
- Conforms to IEC/EN 60601- 1 and 60601-1-2



The **BedSense patient monitor** is a bed pad that is placed under the mattress and contains the fiber optic activity sensor.

The pad is safe:

- It is designed and tested for flammability per 16 CFR 1633
- Contains a Class 1M laser diode that is fully encased.



The **RFID reader** is mounted at the foot of the patient's bed and monitors when someone from the nursing staff enters the room and "swipes" their card. The information from the RFID reader identifies:

- The name of the staff person that is at the bedside
- The time that the staff person came into the room



ActivSense gathers patient and caregiver activity at the bed and allows this information to be interpreted via a variety of reports and user interface devices. This information enables the nursing home staff to monitor activity in real-time, as well as facilitating electronic documentation of patient status and staff response, thus enabling them to be more efficient in performing their duties.